

Section A of Science Abstracts

SECTION A, PHYSICS: SECTION B, ELECTRICAL ENGINEERING

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# Physics Abstracts

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Mechanical properties of solids	67	185	319	454	615	793	1011	1184	1371	1597	1794	2068
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TECHNIQUE. MATERIALS	80	208	344	480	640	831	1034	1210	1420	-	-	-

## ERRATA

Author Index (1950) p. 1192, column 2: Zener, C.: for "3418" read "3415".

Abstr. 1814 (1952) line 4: for "4798 (1950)" read "4798 (1949)".

Abstr. 3563 (1953) line 11: for "Rh<sup>156</sup>," read "Rh<sup>106</sup>".

Abstr. 7864 (1955) line 2: for "A.Luyckz" read "A.Luyckx".

Subject Index (1955) p. 1517, column 1: Entries 1395 and 2344 under the heading "Double refraction, mechanical" to be transferred to the heading "Drops".

p. 1517, column 2: Entry 6970 under the heading "Drops" to be transferred to the heading "Double refraction, mechanical".

Abstr. 42 (1956) line 3: for "March" read "May".

Abstr. 100 (1956) line 4: for "March" read "May".

Abstr. 1717 (1956) line 2: for "Y.Hirschberg" read "Y.Hirshberg".

Abstr. 2488 (1956) line 3: for "R.I.Hudson" read "R.L.Hudson".

Abstr. 5497 (1956) line 2: for "S.B.Karmohapatra" read "S.B.Karmohapatro".

Abstr. 5853 (1956) line 3: for "S.-S.Min" read "S.-S.Minn".

Abstr. 7482 (1956) line 2: for "R.F.Chaudri" read "R.M.Chaudhri".

Abstr. 7681 (1956) line 2: for "M.Govindree" read "M.Govinjee".

Abstr. 905 (1957) line 2: for "M.B.P.Vittorelli" read "M.B.Palma Vittorelli".

Abstr. 5107 (1957) line 3: for "Vol. 245" read "Vol. 243".

Abstr. 5406 (1957) line 2: for "G.J.Batty" read "C.J.Batty".

Abstr. 5651 (1957) line 3: for "P.Falk-Variant" read "P.Falk-Vairant".

Abstr. 6026 (1957) line 2: for "H.Dallmann" read "H.Kallmann".

Abstr. 6465 (1957) line 3: for "J.C.Perbay-Peyroula" read "J.C.Pebay-Peyroula".

Abstr. 7784 (1957) line 3: for "Vol. 224" read "Vol. 244".

Abstr. 671 (1958) line 2: for "J.C.Roucajol" read "J.C.Roucajrol".

Abstr. 781 (1958) line 3: for "J.C.Perbay-Peyroula" read "J.C.Pebay-Peyroula".

Abstr. 3699 (1958) line 2: for "E.R.Caianello" read "E.R.Caianello".

Abstr. 4847 (1958) line 3: for "LINE" read "LENS".

Abstr. 6089 (1958) line 2: for "R.M.Chaudri" read "R.M.Chaudhri".

Abstr. 6811 (1958) line 4: for "Myerson, A." read "Myerson, A.L.".

Author Index (1958) p. 941, column 1: Oldroyd, J.G.: for "3557" read "3757".

p. 946, column 1: under Poincelot, P. For "224" read "244".

Subject Index (1958) p. 987, column 2: "MnSO<sub>4</sub> solutions": transfer entry "high pressure effects 8649" to "MgSO<sub>4</sub> solutions" 3 lines higher.

p. 995, column 2: "Atomic mass, Kr<sup>84.86</sup>": insert "8374".

p. 998, column 2: "P<sup>32</sup>": delete "8299", and insert "P<sup>32</sup> 8299".

p. 1004, column 1: "Cobalt compounds": transfer second entry "8892" to "Cold working".



- Abstr. 661 (1959) line 2: for "E.O.Hittmair" read "O.Hittmair".  
 Abstr. 1457 (1959) line 4: for "I.B.Karpova" read "I.V.Karpova".  
 Abstr. 2038 (1959) line 2: for "W.Zimmerman" read "W.Zimmermann".  
 Abstr. 2169 (1959) line 3: for "B.R.Ramachandra Rao" read "B.Ramachandra Rao".  
 Abstr. 3475 (1959) line 2: for "M.Gliskman" read "M.Glicksman".  
 Abstr. 3592 (1959) line 3: for "L.Levine" read "I.Levine".  
 Abstr. 6767 (1959) line 11: for "Seeman" read "Zeeman".  
 Abstr. 7682 (1959) line 12: for "hydrogeneration" read "hydrogenation".  
 Abstr. 9089 (1959) line 4: for "(Oct., 1958)" read "(Oct., 1956)".  
 Abstr. 11807 (1959) line 3: for "V.T.Teleghi" read "V.L.Teleghi".  
 Abstr. 11895 (1959) line 2: for "I.I.Pomeranchuk" read "I.Ya.Pomeranchuk".  
 Abstr. 12885 (1959) line 4: Journal reference should read "Izv. Akad. Nauk SSSR, Ser. geofiz., 1959, No. 4, 617-20".  
 Abstr. 13364 (1959) line 2: for "W.Schaafs" read "W.Schaaffs".  
 Abstr. 13383 (1959) line 12: for "11 200" read "11 112".  
 line 14: for "270" read "220".  
 line 30: delete "by".  
 line 31: for "5  $\mu$ a" read "250  $\mu$ a peak".  
 Abstr. 13575 (1959) line 5: for "Nacpaul" read "Nagpaul".  
 Abstr. 13666 (1959) line 3: for "I.Ostroumov" read "V.I.Ostroumov".  
 Abstr. 13776 (1959) line 3: for "Vol. 149" read "Vol. 14a".  
 Author Index (1959) p.1390, column 2: after Fritschen, L.J. and van Wijk, W.R., for "2891" read "12891".  
 p.1398, column 1: lines 35-59 (thirteen entries, Gombas, P. to Goodman, L. and Frolen, L.J.) should be inserted alphabetically in column 1, lines 60 to end, and in column 2, lines 1 to 24.  
 p.1462, column 2: after "Neu, H." insert "Neubauer, F.R. and Fokker, A.D. The polarisation of solar radio emission at a frequency of 200 MHz, 5308".  
 p.1521, column 1: for "Walker, R.E. and Westerberg, A.A." read "Walker, R.E. and Westenberg, A.A.". Crystal structure, atomic, inorganic compounds to be transferred to the heading "Crystal structure, atomic, elements".  
 Subject Index (1959) p.1572, columns 1 and 2: The entries "diamonds 11633" and "graphite 10988" under the heading "Crystal structure, atomic, inorganic compounds" to be transferred to the heading "Crystal structure, atomic, elements".  
 p.1580, column 2: Last entry under the heading "Deuterons, scattering" (Abstract 6278-9) to be transferred to the heading "Crystals, etching".  
 Abstr. 151 (1960) line 2: for "received" read "reviewed".  
 Abstr. 847 (1960): add Abstractor's signature "A.H.Gabriel".  
 Abstr. 1089 (1960) line 3: for "1870-5" read "1870-3".  
 Abstr. 1313 (1960) line 3: for "Landowitz" read "Landovitz".  
 Abstr. 1366 (1960) line 3: for "206-300" read "286-300".  
 Abstr. 2840 (1960) line 4: for "655-7" read "635-7".  
 line 6: for "Block" read "Bloch".  
 Abstr. 2924 (1960) line 3: "B.M.Golobin" read "B.M.Golovin".  
 Abstr. 3243 (1960) line 4: for "1958" read "1959".  
 Abstr. 3474 (1960) line 3: for "Vol. 65" read "Vol. 45".  
 Abstr. 3540 (1960) line 11: for "sulphide" read "sulphate".  
 Abstr. 4203 (1960) line 12: after "dioxide" insert comma, for " $\mu$ SO<sub>2</sub>" read " $\mu$ SO", for " $\mu$ NH<sub>3</sub>" read " $\mu$ NH".  
 line 13: for " $\mu$ PH<sub>3</sub>" read " $\mu$ PH".  
 Abstr. 4431 (1960) line 7: for " $\gamma$ -activated" read " $\gamma$ -excited".  
 Abstr. 4432 (1960) line 3: insert page numbers "126-8".  
 Abstr. 4717 (1960) line 3: for "L.Lundén" read "A.Lundén".  
 Abstr. 5185 (1960) line 3: for "(1959)" read "(1957)".  
 Abstr. 5527 (1960) line 8: for " $\Delta$ G" read " $\Delta$ Q".  
 Abstr. 5533 (1960) line 3: for "Chou Guan-Chao" read "Chzhou Guan-Chzhao".  
 Abstr. 5595 (1960) line 3: for "A.M.Baldwin" read "A.M.Baldin".  
 Abstr. 5856 (1960) line 3: for "L.J.Cojan" read "J.L.Cojan".  
 Abstr. 6113 (1960) line 2: for "BULK OF GERMANIUM" read "BULK IN GERMANIUM".  
 Abstr. 6239 (1960) line 2: for "M.Paulis" read "M.Paulus".  
 Abstr. 6577 (1960) line 4: insert "In Russian" at end of journal reference.  
 Abstr. 6620 (1960) line 9: for "10<sup>9</sup> and 10<sup>10</sup> deg-K" read "10<sup>9</sup> and 10<sup>9</sup> deg-K".  
 Abstr. 6907 (1960) line 2: for "G.Toraldi di Francia" read "G.Toraldo di Francia".  
 Abstr. 7008 (1960) line 3: for "Vol. 41" read "Vol. 32".  
 Abstr. 7146 and 7147 (1960) line 3: for "I.M.Bronstein" read "I.M.Bronshstein".  
 Abstr. 7288 (1960) line 3: for "Chou Guan-chao" read "Chzhou Guan-Chzhao".  
 Abstr. 7319 (1960) line 3: for "Chou Kuang-Chou" read "Chzhou Kuang-Chao".  
 Abstr. 7743 (1960) line 4: for "Vol. 55" read "Vol. 45"; for "No. 5" read "No. 7".  
 Abstr. 7851 (1960) line 13: for "cal/<sup>0</sup>K atom" read "cal/<sup>0</sup>Kg atom".  
 Abstr. 7852 (1960) line 16: for "cal/<sup>0</sup>kg atom" read "cal/<sup>0</sup>Kg atom".

(contd on next page).

Abstr. 7993 (1960) line 3: insert "In Russian" at end of journal reference.  
 Abstr. 8033 (1960) line 5: for "Vol. 41" read "Vol. 32".  
 Abstr. 8264 (1960) line 6: for "absorption" read "adsorption".  
 Abstr. 8611 (1960) line 3: for "Ziemkiewicz" read "Zienkiewicz".  
 Abstr. 8733 (1960) line 4: delete "Space Research Discussion, London, 1958  
 (See Abstr. 8522 of 1960)".  
 Abstr. 8853 (1960) line 3: for "Faizulov" read "Faizullof".  
 Abstr. 9168 (1960) line 3: for "Yu.N.Vandakurov" read "Yu.V.Vandakurov".  
 Abstr. 9169 (1960) line 3: for "K.M.Stanyukovich" read "K.P.Stanyukovich".  
 Abstr. 9186 (1960) line 15: for "Mz" read "Mz".  
 Abstr. 9217 (1960): reference should read: Zh. tekhn. Fiz., Vol. 29, No. 7, 815-18  
 (July, 1959). In Russian. English translation in: Soviet  
 Physics—Technical Physics (New York), Vol. 4, No. 7, 736-9  
 (Jan., 1960).  
 Abstr. 9335 (1960) line 3: for "Vol. 15" read "Vol. 45".  
 Abstr. 9521 (1960) line 3: for "Sklyareskii" read "Sklyarevskii".  
 Abstr. 9634 (1960) line 3: for "B.G.Neudachin" read "V.G.Neudachin".  
 Abstr. 9882 (1960) line 3: for "J.F.Cotnwell" read "J.F.Cornwell".  
 Abstr. 10307 (1960) line 6: for "F.W.Cockow" read "F.W.Cuckow".  
 Abstr. 10807 (1960) last line: for "transferring" read "heat-transferring".  
 Abstr. 11284 (1960) line 2: for "G.Briet" read "G.Breit".  
 Abstr. 11457 (1960) line 3: for "I.Bondarenko" read "I.I.Bondarenko".  
 Abstr. 11719 (1960) line 3: for "G.E.Zilberman" read "G.E.Zil'berman".  
 Abstr. 11944 (1960) line 3: for "H.Watanake" read "H.Watanabe".  
 Abstr. 12019 (1960) line 3: for "F.Fujimato" read "F.Fujimoto".  
 Abstr. 12041 (1960) line 12: for "1.5<sup>0h</sup>" read "1.5%".  
 Abstr. 12233 (1960) line 2: for "WIENER-HOPE" read "WIENER-HOPF".  
 Abstr. 12931 (1960) line 3: for "M.J.Moravisk" read "M.J.Moravcsik".  
 Abstr. 13137 (1960) line 8: after "ground" insert "state".  
 Abstr. 13400 (1960): insert journal reference: Phys. Rev., Vol. 119, No. 2,  
 691-3 (July 16, 1960).  
 Abstr. 13458 (1960) line 2: for "J.Riddell, Jr" read "R.J.Riddell, Jr".  
 Abstr. 13490 (1960) line 14: for "M.E.Priestley" read "M.G.Priestley".  
 Abstr. 13536 (1960) line 5: for "A.D.Belyaeu" read "A.D.Belyaev".  
 Abstr. 13830 (1960) line 12: for "M.E.Priestley" read "M.G.Priestley".  
 Abstr. 13940 (1960) line 3: for "A.I.Roitburg" read "A.I.Roitburd".  
 Abstr. 14001 (1960) line 4: for "Lane" read "Laue".  
 Abstr. 14058 (1960) line 5: for "pressure" read "presence".  
 Abstr. 15121 (1960) line 3: for "Ya.S.Uflyanol" read "Ya.S.Uflyand".  
 Abstr. 15611 (1960) line 3: for "H.Narum" read "H.Narumi";  
 line 4: for "(June, 1960)" read "(June, 1959)".  
 Abstr. 16836 (1960) line 5: for "W = MR TB $\alpha$ " read "W = MR/TB $\alpha$ ".  
 Abstr. 17488 (1960) line 3: for "M.Hammermesh" read "M.Hamermesh".  
 Abstr. 18054 (1960) line 3: for "G.B.Abdullayev" read "G.B.Abdullaev".  
 May (1960) p. 638: Abstract serial number "5613" should read "6513".  
 Oct. (1960) p. 1449: for Abstract number "134654" read "14654".



# THE TRANSLITERATION OF RUSSIAN FOR BIBLIOGRAPHICAL PURPOSES

English Letters	Languages	Cyrillic Letters	English Letters	Languages	Cyrillic Letters
a	RSB	А а	p	RSB	П п
b	RSB	Б б	r	RSB	Р р
ch	RSB	Ч ч	s	RSB	С с
d	RSB	Д д	sh	RSB	Ш ш
e	RSB	Е е	shch	R	Щ щ
ě	R	Ё ё	sht	B	Ъ ъ
é	R	Э э	t	RSB	Т т
ê	R B	Ђ ђ	t'	R B	ТЬ ть
f	RSB	Ф ф	t'	S	Ѣ ѣ
g	RSB	Г г	th	R	Ө ө
i	RSB	И и	ts	RSB	Ц ц
ī	R	І і	t-s	RSB	ТС тс
ĩ	R B	Й й	u	RSB	У у
j	S	Џ џ	ũ	B	Ѧ ѧ
j'	S	ђ ё	ū	B	Ѧ ѧ
k	RSB	К к	v	RSB	В в
kh	RSB	Х х	y	S	Ј ј
l	RSB	Л л	ȳ	R	Ы ы
l'	R B	Љ љ	ÿ	R	Ѳ ѳ
l'	S	Љ љ	ya	R B	Ј ј
m	RSB	М м	yu	R B	Ю ю
n	RSB	Н н	z	RSB	З з
n'	R B	Њ њ	zh	RSB	Ж ж
n'	S	Њ њ	'	R	Ѥ ѥ
o	RSB	О о	'	R B	Ѧ ѧ

The use of l', n' and t' in Russian and Bulgarian (where they are not transliterations of a single letter, but merely l, n or t followed by the soft sign) is included to emphasize the fact that they are used for single letters only in Serbian.

Shch and sht invariably represent the letter Ш in Russian and Bulgarian respectively, since the pairs of letters (Щч in Russian and Шт in Bulgarian) seem never to occur consecutively in the respective languages.

The above table is reproduced, by permission, from the pamphlet "The Transliteration of Russian, Serbian and Bulgarian for Bibliographical Purposes" published by The Royal Society, Burlington House, London, W.1 (February, 1953, price 1s.0d.). It represents the system at present in use in "Science Abstracts" for the transliteration of the names of journals and the names of authors of articles abstracted.

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R.Syski, B.Sc., D.I.C., Dipl.Ing.	A.C.Whiffin, Ph.D., M.Sc.(Eng.), B.Sc., A.M.I.Mech.E.
P.Szekely, Dipl.Eng.	A.Wilkinson, B.Sc.
J.C.Taylor, M.A., Ph.D.	C.E.Williams, B.Sc., M.Sc., A.Inst.P.
K.N.R.Taylor, Ph.D.	G.C.Williams, M.Sc., Ph.D., F.Inst.P.
H.N.V.Temperley, Sc.D., M.A.	B.T.M.Willis, B.A., Ph.D., A.Inst.P.
J.Thewlis, D.Sc., F.Inst.P.	A.P.Wilmshurst, A.C.G.I., A.M.I.E.E.
A.P.C.Thiele, B.Sc.	B.J.Wilson, M.A.
K.A.Thomas, M.A., D.Phil.	J.S.Wilson, M.Eng., A.M.I.E.E.
R.H.Thomas, B.Sc., Ph.D., A.Inst.P.	E.P.Wohlfarth, D.Sc., Ph.D., B.Sc., F.Inst.P.
T.S.E.Thomas, B.Sc., Ph.D.	A.B.Wood, D.Sc., F.Inst.P.
F.P.Thomson,	E.R.Wooding, Ph.D., A.R.C.S., D.I.C., A.Inst.P.
D.J.Thouless, M.A., Ph.D.	A.Woroncow, Dipl.Ing.
S.Tolansky, Ph.D., D.Sc., F.R.S.	J.S.Young, B.Sc.(Eng.), A.M.I.E.E.
W.G.Townsend, Ph.D., A.Inst.P.	P.A.Young, M.Sc., A.R.C.S., D.I.C., F.R.A.S.
T.C.Toye, B.Sc., A.Inst.P.	V.V.Zakharov, M.Sc., A.Inst.P., M.I.R.E.
P.T.Trent, B.Sc., Ph.D.	J.M.Zarzycki, M.Sc., A.Inst.P.

A.E.I. Research Laboratory. Abstracts signed thus have been contributed by members of the staff of the Research Laboratory of Associated Electrical Industries, Ltd., Aldermaston, Berkshire.

The names of abstracting journals from which abstracts have been reprinted are given at the end of the "List of Journals".

Abstracts without signature have been prepared from the summary published with the article, except for a small number prepared by the editorial staff of "Science Abstracts".



# LIST OF JOURNALS

The following list gives the full titles of journals referred to in "Science Abstracts", arranged in alphabetical order of the abbreviated titles used in the abstracts. Every endeavour has been made to ensure that the addresses given are those in use at the time of going to press, but as changes are continually being made no guarantee can be given of the accuracy of every entry.

The appearance of a title in this list does not necessarily imply that the journal is received regularly by "Science Abstracts". Material for abstracting comes from many sources, including borrowed copies of journals and reprints supplied by authors. Furthermore, some of the abstracts are reproduced, by permission, from other abstracting periodicals (as indicated at the foot of the abstract), and in these cases the name of the abstracting organization (from whom further information should be sought) is given in the list in place of the address of the journal, when the latter is not known. Particulars of the abstracting organizations are given at the end of this list.

It should be emphasized that an abstract is only published in "Science Abstracts" when an article or book is believed to be generally available. No abstracts are published of dissertations, reports or memoranda with limited circulation, unless copies have been deposited with several public libraries and are available from the publishers; nor of papers presented orally at meetings, unless précis of substantial length are published in the normal way. Thus the appearance of an abstract in "Science Abstracts" may generally be taken as an indication that the original is publicly available, and if it cannot be located in a library, application should be made to the publisher, at the address given in this list. In the case of books, the assistance of a bookseller should be sought. The original cannot be obtained from "Science Abstracts", though assistance will gladly be given in cases of special difficulty.

The contractions of journal titles used with the abstracts, while following the general form of those in the "World List of

Scientific Periodicals" (3rd ed. London, Butterworths Scientific Publications, 1952), differ from them in some cases, to enable the title of the journal to be recognized more readily. General similarity will be found with the contractions used in "Chemical Abstracts", which have recently been adopted by the journals of the American Institute of Physics. To assist in the interpretation of contracted titles, adjectives are printed with a small initial letter, unless they form part of a proper name.

For the benefit of those who are unfamiliar with the form and purpose of such abstracting periodicals as "Science Abstracts", it may be said that each abstract is a summary of an article (or book) published elsewhere, the title of the article (or its English translation) being given at the beginning of the abstract. The "reference", printed immediately after the title and author, gives the name and date of the journal where the article was printed and the appropriate pages. In general, title, author and reference are usually required for the unambiguous identification of an article (e.g. in a bibliography), though the reference alone is sufficient for the location of the article. For books, the town of publication, the name of the publisher, and the year are given in the reference.

The form of the "reference", giving volume number, issue number, pages and date, will, it is hoped, be self-explanatory. It should be emphasized that the date given refers, in nearly every case, to the "issue" or "number" containing the article abstracted; in some cases, particularly when papers are issued separately, the "volume" when bound may bear a different date. The date given is that recorded on the issue, not the actual date of publication or receipt, unless so stated. When the volume carries no number, the year is given in its place.

If no indication of language is given in the abstract, the article may be assumed to be in English. This does not necessarily hold, however, for abstracts reproduced from other abstracting periodicals giving no indication of language.

- A.C.E.C. Rev.  
A.C.E.C. Revue. — Ateliers de Constructions Electriques de Charleroi, Avenue Emile Rousseau, Marcinelle-Charleroi. [French - language edition].
- A.E.G. Mitt.  
A.E.G. Mitteilungen. — Allgemeine Elektrizitäts-Gesellschaft, Hohenzollerndamm 150, Berlin-Grünwald. [A translation of selected articles is published as: A.E.G. Progress].
- A.E.G. Progress  
A.E.G. Progress. — Allgemeine Elektrizitäts-Gesellschaft, Hohenzollerndamm 150, Berlin-Grünwald. [English translations of selected articles from: A.E.G. Mitteilungen].
- A.E.I. Engng Rev.  
A.E.I. Engineering Review. (Replaces: B.T.H. Activities, Metropolitan-Vickers Gazette, Siemens Edison Swan Journal) — Associated Electrical Industries, 33 Grosvenor Place, S.W.1.
- A.E.I. Res. Lab. Repr.  
A.E.I. Research Laboratory Reprint (Formerly: British Thomson-Houston Research Laboratory Publication). — Associated Electrical Industries, Rugby.
- A.E.I. tech. Monogr.  
A.E.I. Technical Monograph (Formerly: B.T.H. Technical Monograph). — Associated Electrical Industries, Rugby.
- A.S.T.M. Bull.  
American Society for Testing Materials. Bulletin. — 1916 Race Street, Philadelphia, Pa.
- A.T.E.J.  
A.T.E. Journal. — Automatic Telephone and Electric Co., Strowger Works, Liverpool 7.
- A.W.A. tech. Rev.  
A.W.A. Technical Review. — Amalgamated Wireless Australasia, 554 Parramatta Road, Ashfield, New South Wales.
- Abhandl. Braunsch. Wiss. Gesell.  
Abhandlungen der Braunschweigischen Wissenschaftlichen Gesellschaft. — Publisher: Friedr. Vieweg, Brunswick.
- Abhandl. Dtsch. Akad. Wiss. Berlin, Kl. Math. Phys. Tech.  
Abhandlungen der Deutschen Akademie der Wissenschaften, Klasse für Mathematik, Physik und Technik. — Publisher: Akademie-Verlag, Mohrenstrasse 39, Berlin W.8.
- Acad. R.P. Romine Bul. Sti. Sect. Sti. Mat. Fiz.  
Academia Republicii Populare Romine Buletin Stiintific. Sectiunea de Stiinta Matematica si Fizice — Libraria Academiei R.P.R., Calea Victoriei 27, Bucarest.
- Acta chem. Scand.  
Acta Chemica Scandinavica. — Ejnar Munksgaard, Nørregade 6, Copenhagen.
- Acta cryst.  
Acta Crystallographica. — International Union of Crystallography. Publisher: Ejnar Munksgaard, Nørregade 6, Copenhagen. Subscription address: Polycrystal Book Service, G.P.O. Box 620, Brooklyn 1, N.Y.
- Acta electronica  
Acta Electronica. — 23 Rue du Retrait, Paris 20.
- Acta metallurgica  
Acta Metallurgica. — P.O. Box 1088, Schenectady, N.Y. Publisher: Pergamon Press (Acta Metallurgica), 122 East 57th Street, New York 22, N.Y.
- Acta phys. Austriaca  
Acta Physica Austriaca. — Springer-Verlag, Mülkerbastei 5, Vienna I.
- Acta phys. Hungar.  
Acta Physica Hungarica. — Magyar Tudományos Akadémia Könyvtára, Akadémia-utca 2, Budapest 5. Subscription address: "Kultura" Foreign Trade Company for Books and Newspapers, Népköztársaság útja 21, Budapest 6.

- Acta phys. Polon.  
Acta Physica Polonica. — Polska Akademia Nauk.  
Subscription address: PKWZ "Ruch", ul. Wilcza 46, Warsaw.
- Acta polytech. Scand.  
Acta Polytechnica Scandinavica. Subseries (Electrical Engineering Series, El; Mathematics and Computing Machinery Series, Ma; Physics including Nucleonic Series, Ph). — Scandinavian Council for Applied Research.  
Publication address: P.O. Box 5073, Stockholm 5.
- Acta tech. (Prague)  
Acta technica. — Československá Akademie Věd.  
Publication address: Jindřišská 14, Prague 3.
- Acta tech. Hungar.  
Acta Technica Academiae Scientiarum Hungaricae.  
— Magyar Tudományos Akadémia Könyvtára, Akadémia-utca 2, Budapest 5. Subscription address: "Kultura" Foreign Trade Company for Books and Newspapers, Népköztársaság útja 21, Budapest 6.
- Acustica  
Acustica. — S. Hirzel Verlag, Stuttgart.
- Advances in Phys.  
Advances in Physics. (Quarterly Supplement of the Philosophical Magazine). — Taylor and Francis, Red Lion Court, Fleet Street, London, E.C.4.
- Agric. horticult. engng Abstr.  
Agricultural and Horticultural Engineering Abstracts. — British Society for Research in Agricultural Engineering, National Institute for Agricultural Engineering, Wrest Park, Silsoe, Beds.
- Akust. Beih.  
Akustische Beihefte. — Issued under the auspices of the international journal Acustica. The pagination is continuous with that of Acustica.
- Akust. Zh.  
Akusticheskii Zhurnal. — Akademiya Nauk SSSR, Lenin Prospekt, Moscow. [A translation is published as: Soviet Physics — Acoustics].
- Allis Chalmers elect. Rev.  
Allis-Chalmers Electrical Review. — Allis-Chalmers, Milwaukee 1, Wisconsin.
- Alta Frekvenza  
Alta Frekvenza. — Associazione Elettrotecnica Italiana, Via San Paolo 10, Milan.
- Amer. J. Phys.  
American Journal of Physics. — American Institute of Physics, 335 East 45th Street, New York 17, N.Y.
- An. Acad. Brasil. Cienc.  
Anais da Academia Brasileira de Ciências.  
— Caixa Postal 229, Rio de Janeiro.
- An. Mecan. Elect.  
Anales de Mecanica y Electricidad. — Reina 31, Madrid.
- An. Real Soc. Espan. Fis. Quim.  
Anales de la Real Sociedad Española de Física y Química. Serie A (Física). — Ciudad Universitaria, Madrid.
- Analyt. Chem.  
Analytical Chemistry. — American Chemical Society, 1155 Sixteenth Street N.W., Washington 6, D.C.
- Ann. Acad. Sci. Fennicae  
Annales Academiae Scientiarum Fennicae. Series A I (Mathematica); Series A II (Chemica); Series A III (Geologica-Geographica); Series A VI (Physica). — Snellmaninkatu 9-11, Helsinki.
- Ann. Acfas  
Annales de l'Acfas. — Association Canadienne-Française pour l'Avancement des Sciences, Université de Montréal, 2900 Boulevard du Mont Royal, Montreal 3.
- Ann. Assoc. Internat. Calcul Analogique  
Annales de l'Association internationale pour le Calcul Analogique. — Publisher: Presses Academiques Europeennes, 98 Chaussee de Charleroi, Brussels 6.
- Ann. Astrophys.  
Annales d'Astrophysique. — Service des Publications du C.N.R.S., 15 Quai Anatole-France, Paris 7.
- Ann. Astrophys. Suppl.  
Suppléments aux Annales d'Astrophysique. — Service des Publications du C.N.R.S., 15 Quai Anatole-France, Paris 7.
- Ann. Fac. Sci. Univ. Toulouse  
Annales de la Faculté des Sciences de l'Université de Toulouse. — Published by: Gauthier-Villars, 55 Quai des Grands Augustins, Paris 6.
- Ann. Franc. Chronom.  
Annales Françaises de Chronometrie. — Service des Publications du C.N.R.S., 15 Quai Anatole-France, Paris 7.
- Ann. Geofis.  
Annali di Geofisica. — Istituto Nazionale di Geofisica, Città Universitaria, Rome.
- Ann. Geophys.  
Annales de Géophysique. — Service des Publications du C.N.R.S., 15 Quai Anatole-France, Paris 7.
- Ann. Inst. Fourier  
Annales de l'Institut Fourier. — Place du Doyen Gosse, Grenoble (Isère).
- Ann. Inst. Poincare  
Annales de l'Institut Henri Poincaré. — 11 Rue Pierre-Curie, Paris 5.
- Ann. Phys. (Leipzig)  
Annalen der Physik. — J.A. Barth, Salomonstrasse 18 B, Leipzig, C.1.
- Ann. Phys. (New York)  
Annals of Physics. — Academic Press, 111 Fifth Avenue, New York 3, N.Y.
- Ann. Phys. (Paris)  
Annales de Physique. — Masson, 120 Boulevard Saint-Germain, Paris 6.
- Ann. Radioelect.  
Annales de Radioélectricité. — Compagnie Générale de T.S.F., Centre Documentation de la CSF, 101 Boulevard Murat, Paris 16.
- Ann. sci. Ecole Normale Super.  
Annales Scientifiques de l'École Normale Supérieure. — Publisher: Gauthier-Villars, 55 Quai des Grands-Augustins, Paris 6.
- Ann. Soc. Sci. Bruxelles  
Annales de la Société Scientifique de Bruxelles.  
— 11 Rue des Récollets, Louvain.
- Ann. Telecomm.  
Annales des Télécommunications. — Centre National d'Études des Télécommunications. Subscription address: Société de la Revue d'Optique, 3 et 5, Boulevard Pasteur, Paris 15.
- Ann. Univ. Turku  
Annales Universitatis Turkuensis. Ser. AI (Astronomica-Chemica-Physica-Mathematica). — Turun Yliopiston Turku, Finland.
- Annu. Fac. Phil. Skopje, Sect. Sci. nat.  
Annuaire de la Faculté de Philosophie de l'Université de Skopje, Section des sciences naturelles. (Godišen Zbornik) — Institut de Physique de la Faculté de Sciences, Postanski fah 146, Skopje (Macedonia), Yugoslavia.
- Annu. Proc. Assoc. Socs S. Africa  
Annual Proceedings of the Associated Scientific and Technical Societies of South Africa. — Kelvin House, Marshall and Holland Streets, P.O. Box 5907, Johannesburg.
- Annu. Rep. Sci. Works Fac. Sci. Osaka Univ.  
Annual Report of Scientific Works from the Faculty of Science, Osaka University. — Osaka University, Nakanoshima, Osaka.
- Appl. Math. Ser. Nat. Bur. Stand.  
Applied Mathematics Series, National Bureau of Standards. — U.S. Government Printing Office, Washington 25, D.C.
- Appl. sci. Res.  
Applied Scientific Research. Section A (Mechanics, Heat, Chemical Engineering, Mathematical Methods); Section B (Electrophysics, Acoustics, Optics, Mathematical Methods). — Martinus Nijhoff, The Hague.
- Appl. Spectrosc.  
Applied Spectroscopy. — Society for Applied Spectroscopy. Publication address: P.O. Box 1228, 417 Cleveland Avenue, Plainfield, New Jersey.
- Appl. and Industr.  
Applications and Industry. — Part II of the Transactions of the American Institute of Electrical Engineers [Trans Amer. Inst. Elect. Engrs].
- Arch. Automat. Telemekh.  
Archiwum Automatyki i Telemekhaniki. — Polska Akademia Nauk, Zakład Automatyki. Subscription address: PKWZ "Ruch", ul. Wilcza 46, Warsaw.
- Arch. elekt. Übertragung  
Archiv der elektrischen Übertragung. — S. Hirzel Verlag, Stuttgart.



# LIST OF JOURNALS

- Arch. Elektrotech. (Berlin)**  
Archiv für Elektrotechnik. — Springer-Verlag, Heidelberger Platz 3, Berlin-Wilmersdorf (West Berlin); Neuenheimer Landstrasse 28-30, Heidelberg.
- Arch. elektrotech. (Warsaw)**  
Archiwum Elektrotechniki. — Polska Akademia Nauk, Instytut Podstawowych Problemów Techniki. Subscription address: PKWZ "Ruch", ul. Wilcza 46, Warsaw.
- Arch. Math. Naturvid.**  
Archiv for Mathematik og Naturvidenskab. — Faculty of Mathematics and Science, University of Oslo, Blindern, per Oslo.
- Arch. Mech. Stos.**  
Archiwum Mechaniki Stosowanej. — Polska Akademia Nauk, Instytut Podstawowych Problemów Techniki, Pałac Kultury i Nauki, Warsaw.
- Arch. Rational Mech. Anal.**  
Archive for Rational Mechanics and Analysis. — Springer-Verlag, Heidelberger Platz 3, Berlin-Wilmersdorf.
- Arch. Sci. (Geneva)**  
Archives des Sciences. — Société de Physique et d'Histoire Naturelle de Genève. Subscription address: Librairie Payot, 40 Rue du Marché, Geneva.
- Arch. tech. Messen**  
Archiv für technisches Messen und industrielle Messtechnik. — R. Oldenbourg, Rosenheimer Str. 145, Munich 8.
- Ark. Astron.**  
Arkiv för Astronomi. — Kungliga Svenska Vetenskapsakademien, Stockholm 50. Subscription address: Almqvist & Wiksell, Gamla Brogatan 26, Stockholm.
- Ark. Fys.**  
Arkiv för Fysik. — Kungliga Svenska Vetenskapsakademien, Stockholm 50. Subscription address: Almqvist & Wiksell, Gamla Brogatan 26, Stockholm.
- Ark. Geofys.**  
Arkiv för Geofysik. — Kungliga Svenska Vetenskapsakademien, Stockholm 50. Subscription address: Almqvist & Wiksell, Gamla Brogatan 26, Stockholm.
- Ark. Kemi**  
Arkiv för Kemi. — Kungliga Svenska Vetenskapsakademien, Stockholm 50. Subscription address: Almqvist & Wiksell, Gamla Brogatan 26, Stockholm.
- Ark. Mat.**  
Arkiv för Matematik. — Kungliga Svenska Vetenskapsakademien, Stockholm 50. Subscription address: Almqvist & Wiksell, Gamla Brogatan 26, Stockholm.
- Ark. Mineral.**  
Arkiv för Mineralogi och Geologi. — Kungliga Svenska Vetenskapsakademien, Stockholm 50. Subscription address: Almqvist & Wiksell, Gamla Brogatan 26, Stockholm.
- Asea J.**  
Asea Journal. — Allmänna Svenska Elektriska AB, Västerås; Fuller Electric Ltd., Fulbourne Road, London, E.17.
- Astron. J.**  
Astronomical Journal. — American Institute of Physics, 335 East 45th Street, New York 17, N.Y.
- Astron. Zh.**  
Astronomicheskii Zhurnal. — "Akademkniga", ul. Kuibysheva 8, Moscow. [A translation is published as: Soviet Astronomy — AJ].
- Astrophys. J.**  
Astrophysical Journal. — University of Chicago Press, 5750 Ellis Avenue, Chicago 37, Illinois.
- Astrophys. Norge.**  
Astrophysica Norvegica. — Institute of Theoretical Astrophysics, University of Oslo, Blindern, per Oslo. Subscription address: H. Aschehoug (W. Nygaard), Oslo.
- Atom u. Strom**  
Atom and Strom. — Vereinigung Deutscher Elektrizitätswerke. Verlags- u. Wirtschaftsgesellschaft der Elektrizitätswerke, Bockenheimer Landstrasse 109, Frankfurt a. M.
- Atomic Energy Res. Establ. (Harwell), Inf. Bibl.; Lecture; Mem.; Rep.; Transl.**  
Atomic Energy Research Establishment (Harwell), Information Bibliography; Lecture; Memorandum; Report; Translation. — H.M. Stationery Office, Kingsway, London, W.C.2.
- Atomkernenergie**  
Atomkernenergie. — Verlag Karl Thieme, Pöhlersheimerstrasse 38, Munich 9.
- Atomkraftwerk**  
Das Atomkraftwerk. — Supplement to: Österreichische Zeitschrift für Elektrizitätswirtschaft [Österr. Z. ElektWirtsch.].
- Atomnaya Energiya**  
Atomnaya Energiya. — Akademiya Nauk SSSR, Lenin Prospekt, Moscow. [English translations of relevant papers are published in Reactor Science.].
- Atti Accad. Sci. Torino**  
Atti della Accademia delle Scienze di Torino. I. Classe di Scienze Fisiche, Matematiche e Naturali. — Via Accademia delle Scienze 6; Via Maria Vittoria 3, Turin (208).
- Atti Fond. Ronchi**  
Atti della Fondazione Giorgio Ronchi e Contributi dell'Istituto Nazionale di Ottica. — Via S. Leonardo 79, Arcetri-Firenze, Italy.
- Atti Soc. Peloritana Sci. Fis. Mat. Nat.**  
Atti della Società Peloritana di Scienze Fisiche Matematiche e Naturali. — Università di Messina, Messina.
- Austral. J. appl. Sci.**  
Australian Journal of Applied Science. — Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, C.2, Victoria.
- Austral. J. Phys.**  
Australian Journal of Physics. — Commonwealth Scientific and Industrial Research Organization, 314 Albert Street, East Melbourne, C.2, Victoria.
- Austral. J. Sci.**  
Australian Journal of Science. — Australian and New Zealand Association for the Advancement of Science, Science House, 157 Gloucester Street, Sydney.
- Automat. Elect. tech. J.**  
Automatic Electric Technical Journal (Formerly: General Telephone Technical Journal). — Automatic Electric Laboratories Inc., Northlake, Illinois.
- Automat. remote Control.**  
Automation and Remote Control. — Instrument Society of America, 313 Sixth Avenue, Pittsburgh 22, Pennsylvania. (A translation of: Avtomatika i Telemekhanika [Avtomat. i Telemekh.]).
- Automatica si Electronica**  
Automatica si Electronica. — Editorial address: Str. Ion Ghica 3, Bucarest. Administration address: Calea Victoriei 118, Bucarest.
- Automatisme**  
Automatisme. — Dunod et Cie, 92 Rue Bonaparte, Paris 6.
- Avhandl. Norske VidenskAkad. Oslo**  
Avhandlingar utgitt av Det Norske Videnskaps-Akademi i Oslo. I. Matematisk-Naturvidenskaplige Klasse. — Faculty of Mathematics and Science, University of Oslo, Blindern, per Oslo.
- Avtomat. i Telemekh.**  
Avtomatika i Telemekhanika. — Akademiya Nauk SSSR, Lenin Prospekt, Moscow. [A translation is published as: Automation and Remote Control (Automat. remote Control)].
- B.B.C. Engng Monogr.**  
B.B.C. Engineering Division Monographs. — British Broadcasting Corporation Publications, 35 Marylebone High Street, London, W.1.
- B.B.C. Nachr.**  
B.B.C. Nachrichten. — Brown, Boveri und Cie, Mannheim.
- B.T.-H. Activ.**  
B.T.H. Activities. — Replaced by: A.E.I. Engineering Review [A.E.I. Engng Rev.].
- B.T.-H. Res. Lab. Publ.**  
British Thomson-Houston Research Laboratory Publication. — Title changed to: A.E.I. Research Laboratory Reprint [A.E.I. Res. Lab. Repr.].
- B.T.-H. tech. Monogr.**  
British Thomson-Houston Technical Monograph. — Title changed to: A.E.I. Technical Monograph [A.E.I. tech. Monogr.].
- Beama J.**  
Beama Journal. — British Electrical and Allied Manufacturers' Association, 36 Kingsway, London, W.C.2.
- Bell Lab. Record**  
Bell Laboratories Record. — Bell Telephone Laboratories, 463 West Street, New York 14, N.Y.

- Bell Syst. tech. J.  
Bell System Technical Journal. — American Telephone and Telegraph Co., 195 Broadway, New York 7, N.Y.
- Bol. Fac. Ingen. Montevideo  
Boletín de la Facultad de Ingeniería y Agrimensura de Montevideo. — Herrera y Reissig 565, Montevideo.
- Brennstoff-Wärme-Kraft (B.W.K.)  
BWK. Brennstoff-Wärme-Kraft. — VDI-Verlag, Düsseldorf.  
Publisher: Springer-Verlag, Berlin-Göttingen-Heidelberg.
- Brit. Commun. and Electronics  
British Communications and Electronics. — Heywood and Co., Drury House, Russell Street, Drury Lane, London, W.C.2.
- Brit. J. appl. Phys.  
British Journal of Applied Physics. — The Institute of Physics and the Physical Society, 47 Belgrave Square, London, S.W.1.
- Brit. J. Radiol.  
British Journal of Radiology. — British Institute of Radiology, 32 Welbeck Street, London, W.1.
- Brit. Kinematogr.  
British Kinematography. — British Kinematograph Society, 164 Shaftesbury Avenue, London, W.C.2.
- Brit. Pwr Engng  
British Power Engineering. — George Newnes, Tower House, Southampton Street, London, W.C.2.
- Brit. Stand.  
British Standards. — British Standards Institution, 2 Park Street, London, W.1.
- Brit. Weld. J.  
British Welding Journal. — Institute of Welding, 54 Princes Gate, London, S.W.7; British Welding Research Association, 19, Fitzroy Square, London, W.1.
- Brown Boveri Rev.  
Brown Boveri Review. — Brown, Boveri & Company, Baden, Switzerland; 75 Victoria Street, London, S.W.1.
- Bul. Inst. Politeh. Iasi  
Buletinul Institutului Politehnic din Iasi (Serie Nouă).  
— Polytechnic Institute, Jassy.
- Bull. Acad. Polon. Sci. Ser. Sci. math. astron. phys.  
Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Mathématiques, Astronomiques et Physiques.  
— Polish Academy of Sciences, Distribution Centre for Scientific Publications, Pałac Kultury i Nauki, Warsaw.
- Bull. Acad. Polon. Sci. Ser. Sci. tech.  
Bulletin de l'Académie Polonaise des Sciences. Série des Sciences Techniques. — Polish Academy of Sciences, Distribution Centre for Scientific Publications, Pałac Kultury i Nauki, Warsaw.
- Bull. Acad. Roy. Belgique Cl. Sci.  
Bulletin de la Classe des Sciences de l'Académie Royale de Belgique. — Palais des Académies, rue Ducale 1, Brussels.
- Bull. Amer. Meteorol. Soc.  
Bulletin of the American Meteorological Society. — 45 Beacon Street, Boston 8, Massachusetts.
- Bull. Amer. Phys. Soc.  
Bulletin of the American Physical Society. — Columbia University, New York 27, N.Y.
- Bull. Assoc. Suisse Elect.  
Bulletin de l'Association Suisse des Électriciens. (Organe Commun de l'Association Suisse des Électriciens [ASE] et de l'Union des Centrales Suisses d'Électricité [UCS]).  
— Seefeldstrasse 301, Zürich 8.
- Bull. astron. (Paris)  
Bulletin Astronomique. — L'Observatoire de Paris, 61 Avenue de l'Observatoire, Paris 14. Publisher: Gauthier-Villars, 55 Quai des Grands-Augustins, Paris 6.
- Bull. Calcutta Math. Soc.  
Bulletin of the Calcutta Mathematical Society.  
— 92 Upper Circular Road, Calcutta 9.
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